Exploring psychology

The effects of cannabis

Man
Right Mark, the next thing I'd like you to do is put this into your mouth on to your tongue…

Rob Tunbridge
Well for the first time, certainly in the UK, we have gone through a complete experimental set up where we know as many and we've measured as many of the parameters as we possibly can and I think for the first time in the world, related these real life cannabis-driving situations. We've measured saliva fluid levels, the urine fluid levels, the blood fluid levels. We've used realistic doses. We've controlled them against placebo. We've asked people how they feel. We've tested out how impaired they are with police surgeons doing standardised sobriety tests. We've asked their subjective opinion and finally we've actually related that to how they perform on a number of tests.

Man
Right…

Narrator
These tests measure the physiological effects of cannabis and set them along side the measures of the psychological effects given by mood assessment questionnaires. This complex experiment assesses the effects of cannabis in two ways. The first is a simple tracking task, technically a classic experiment, where the situation is tightly controlled. The second is a task, which more closely mirrors the real world, is carried out in a driving simulator, and tests overall performance.

Woman
Okay then Mark this is the adaptive tracking task here. Basically on the screen you will see a circle which will randomly walk around the screen and then there will also be a dot and basically your task is using the joystick to try and keep the dot within the circle. Okay, so, are you happy with that?

Mark
Yep.

Narrator
The classic tracking task tests one aspect of driving performance. The skills you'd use to keep in lane on the motorway. It's a task that's been stripped down to essentials. It simply measures hand-eye co-ordination and it's sensitive enough to pick up even slight changes in reaction times as a result of the effects of cannabis. The drawback of this task however is obvious. It's nothing like the sort of tasks you might encounter in the real world.

Rob Tunbridge
The TR driving simulator is about as close as you can get to sort of real driving in this sort of experimental set-up. On the roads studies have been done. In Holland for instance but the, because of the safety factor the doses they're using have to be so small that you can end up not seeing the effect so doing a quasi experimental situation does allow you more control over the experiment and therefore you can be more realistic on the sorts of levels of cannabis that people are going to use.

Woman
As you can see this is a driving simulator and as you can see it's a real car and it actually has hydraulic motion so you're going to get all the feedback that you would from a normal car as you're driving along…

Rob Tunbridge
We've done everything that we can to make it as, as real life and as realistic without the obvious dangers and all the ethical considerations, which would exclude the possibility of doing it in a real life situation.

Woman
…and I'll talk to you further from the control room with some instructions about the trials.

Mark
Brilliant, cheers.

Andrew Parkes
One way in which we try and characterise the driving task is to think of it in three different levels and we talk about the operational control level, simply your ability to press the pedal at the right time, steering in the right direction. The higher levels from that though are the tactical level; deciding how you interact with other traffic; what lane you should adopt; what speed you should adopt given that the other traffic is doing this, that or the other to you, and probably even more importantly, there's the strategic decisions about whether you should take this journey or not. What type of journey you should conduct? Now you can imagine that those factors, tactical and strategic decision-making could be heavily influenced by impairing agents like cannabis and or other drugs and it's those sorts of situations, which we need to start to tap into.

Woman
Okay Mark, I'm just going to set the computer up ready for you. So you've got the road number here as road number 1 and this means the abscissa, which is the position along the route, so we know exactly where the driven vehicle is, and here is the speed of the driven vehicle, which at the moment is increasing sort of up to the fifty mile an hour now.

Narrator
The advantage of this computer-controlled simulator is that every participant reacts to the same events on the same stretch of road in the same sequence